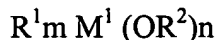


This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

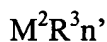
1. (Previously presented) A photosensitive composition for volume hologram recording comprising an organic-inorganic hybrid polymer and/or its hydrolyzed polycondensate and an organometallic compound represented by the following general formula 2, or a hydrolyzed polycondensate of said organic-inorganic hybrid polymer and/or its hydrolyzed polycondensate and said organometallic compound, further a photopolymerization reactive compound and a photopolymerization initiator, wherein said organic-inorganic hybrid polymer is obtainable by copolymerizing at least an organometallic compound represented by the following general formula 1 and a monomer having an ethylenically unsaturated bonding:

General formula 1:



wherein  $M^1$  represents a metallic atom,  $R^1$  may be identical or different and represents a group having an ethylenically unsaturated bonding and containing 1-10 carbon atoms,  $R^2$  may be identical or different and is alkyl group containing 1-10 carbon atoms,  $m+n$  represents the number of valence of metal  $M^1$ ,  $m \geq 1$  and  $n \geq 1$ ,

General formula 2:



wherein  $M^2$  represents a metallic atom,  $R^3$  may be identical or different and is a halogen, an alkyl group, alkoxyl group or acyloxy group containing 10 carbon atoms or less respectively

or hydroxyl group, all or portion of these groups may be replaced with chelate ligand, and  $n'$  represents the number of valence of metal  $M^{n'}$ .

2-3. (Cancelled)

4. (Original) A photosensitive composition for volume hologram recording according to claim 1, wherein said composition further comprises a sensitizing pigment.

5. (Original) A photosensitive composition for volume hologram recording according to claim 1, wherein said photopolymerization reactive compound is a compound having an ethylenically unsaturated bonding capable of performing addition polymerization and said photopolymerization initiator is a photo-radical polymerization initiator.

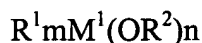
6. (Original) A photosensitive composition for volume hologram recording according to claim 1, wherein said photopolymerization reactive compound is a compound capable of performing cationic polymerization and said photopolymerization initiator is a photo-cationic polymerization initiator.

7. (Previously Presented) A photosensitive medium for volume hologram recording, wherein a coating layer of a photosensitive composition for volume hologram recording according to any one of claim 1 is provided on a substrate.

8. (Previously Presented) A photosensitive medium for volume hologram recording, wherein a volume hologram recording material layer comprising a hydrolyzed polycondensate of

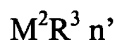
an organic-inorganic hybrid polymer obtainable by copolymerizing at least an organometallic compound represented by the following general formula 1 and a monomer having an ethylenically unsaturated bonding and/or its hydrolyzed polycondensate and an organometallic compound represented by the following general formula 2, a photopolymerization reactive compound, and a photopolymerization initiator is provided on a substrate:

General formula 1:



wherein  $M^1$  represents a metallic atom,  $R^1$  may be identical or different and represents a group having an ethylenically unsaturated bonding and containing 1-10 carbon atoms,  $R^2$  may be identical or different and is alkyl group containing 1-10 carbon atoms,  $m+n$  represents the number of valence of metal  $M^1$ ,  $m \geq 1$  and  $n \geq 1$ ,

General formula 2:



wherein  $M^2$  represents a metallic atom,  $R^3$  may be identical or different and is a halogen, an alkyl group, an alkoxyl group or an acyloxy group containing 10 carbon atoms or less respectively or a hydroxyl group, all or portion of these groups may be replaced with chelate ligand, and  $n'$  represents the number of valence of metal  $M^2$ .

9. (Cancelled)

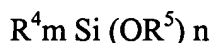
10. (Original) A photosensitive medium for volume hologram recording according to claim 8, wherein said volume hologram recording material layer further comprises a sensitizing pigment.

11. (Original) A photosensitive medium for volume hologram recording according to claim 8, wherein said photopolymerization reactive compound is a compound having an ethylenically unsaturated bonding capable of performing addition polymerization and said photopolymerization initiator is a photo-radical polymerization initiator.

12. (Original) A photosensitive medium for volume hologram recording according to claim 8, wherein said photopolymerization reactive compound is a compound capable of performing cationic polymerization and said photopolymerization initiator is a photo-cationic polymerization initiator.

13. (Original) A photosensitive composition for volume hologram recording comprising an organic-inorganic hybrid polymer which is obtainable by copolymerizing at least an organic silicon compound represented by the following general formula 3 and a monomer having an ethylenically unsaturated bonding and/or a hydrolyzed polycondensate of said organic-inorganic hybrid polymer, an organometallic particle which has a photopolymerization reactive group and is capable of exhibiting a refractive index different from that of hydrolyzed polycondensate of said organic-inorganic hybrid polymer when said organometallic particle is in a form of a polymer and a photopolymerization initiator:

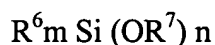
General formula 3:



wherein  $R^4$  may be identical or different and is a group having an ethylenically unsaturated bonding and containing 1-10 carbon atoms,  $R^5$  may be identical or different and is an alkyl group containing 1-10 carbon atoms,  $m+n=4$ ,  $m \geq 1$  and  $n \geq 1$ .

14. (Original) A photosensitive composition for volume hologram recording according to claim 13, wherein said composition further comprises an organic silicon compound represented by the following general formula 4:

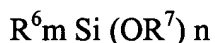
General formula 4:



wherein  $R^6$  may be identical or different and is an alkyl group containing 1-10 carbon atoms, or a hydrocarbon group containing 1-10 carbon atoms and having an alkoxyl, a vinyl, an acryloyl, a methacryloyl, an epoxy, an amide, a sulfonyl, a hydroxyl or a carboxyl,  $R^7$  may be identical or different and is an alkyl group containing 1-10 carbon atoms,  $m+n=4$ ,  $m \geq 1$ , and  $n \geq 1$ .

15. (Original) A photosensitive composition for volume hologram recording according to claim 13, wherein said hydrolyzed polycondensate is a hydrolyzed polycondensate of said organic-inorganic hybrid polymer and/or its hydrolyzed polycondensate and an organometallic compound represented by the following general formula 4:

General formula 4:

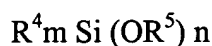


wherein  $R^6$  may be identical or different and is an alkyl group containing 1-10 carbon atoms, or a hydrocarbon group containing 1-10 carbon atoms and having an alkoxyl, a vinyl, an acryloyl, a methacryloyl, an epoxy, an amide, a sulfonyl, a hydroxyl or a carboxyl,  $R^7$  may be identical or different and is an alkyl group containing 1-10 carbon atoms,  $m+n=4$ ,  $m \geq 1$ , and  $n \geq 1$ .

16. (Original) A photosensitive composition for volume hologram recording according to claim 13, wherein said composition further comprises a sensitizing pigment.
17. (Original) A photosensitive composition for volume hologram recording according to claim 13, wherein said organometallic particle is a compound having an ethylenically unsaturated bonding capable of performing addition polymerization as a photopolymerization reactive group and said photopolymerization initiator is a photo-radical polymerization initiator.
18. (Original) A photosensitive composition for volume hologram recording according to claim 13, wherein said organometallic particle is a compound having a cationic polymerization group as a photopolymerization reactive group and said photopolymerization initiator is a photo-cationic polymerization initiator.
19. (Previously Presented) A photosensitive medium for volume hologram recording, wherein a coating layer of a photosensitive composition for volume hologram recording according to any one of claim 18 is provided on a substrate.
20. (Original) A photosensitive medium for volume hologram recording, wherein a volume hologram recording material layer comprising a hydrolyzed polycondensate of an organic-inorganic hybrid polymer obtainable by copolymerizing at least an organic silicon compound represented by the following general formula 3 and a monomer having an ethylenically unsaturated bonding, and an organometallic particle which has a photopolymerization reactive group and is capable of exhibiting a refractive index different from that of hydrolyzed

polycondensate of said organic-inorganic hybrid polymer when said organometallic particle is in a form of a polymer and a photopolymerization initiator is provided on a substrate:

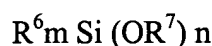
General formula 3:



wherein  $R^4$  may be identical or different and is a group having an ethylenically unsaturated bonding and containing 1-10 carbon atoms,  $R^5$  may be identical or different and is an alkyl group containing 1-10 carbon atoms,  $m+n=4$ ,  $m \geq 1$  and  $n \geq 1$ .

21. (Original) A photosensitive medium for volume hologram recording according to claim 20, wherein said hydrolyzed polycondensate contained in said volume hologram recording material layer is a hydrolyzed polycondensate of said organic-inorganic hybrid polymer and/or its hydrolyzed polycondensate and an organic silicon compound represented by the following general formula 4:

General formula 4:



wherein  $R^6$  may be identical or different and is an alkyl group containing 1-10 carbon atoms, or a hydrocarbon group containing 1-10 carbon atoms and having an alkoxyl, a vinyl, an acryloyl, a methacryloyl, an epoxy, an amide, a sulfonyl, a hydroxyl or a carboxyl,  $R^7$  may be identical or different and is an alkyl group containing 1-10 carbon atoms,  $m+n=4$ ,  $m \geq 1$ , and  $n \geq 1$ .

22. (Original) A photosensitive medium for volume hologram recording according to claim 20, wherein said volume hologram recording material layer further comprises a sensitizing pigment.

23. (Original) A photosensitive medium for volume hologram recording according to claim 20, wherein said organometallic particle is a compound having an ethylenically unsaturated bonding capable of performing addition polymerization as a photopolymerization reactive group and said photopolymerization initiator is a photo-radical polymerization initiator.

24. (Original) A photosensitive medium for volume hologram recording according to claim 20, wherein said organometallic particle is a compound having a cationic polymerization group as a photopolymerization reactive group and said photopolymerization initiator is a photo-cationic polymerization initiator.

25-40. (Cancelled).